



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,509	04/19/2006	Philippe Chatellard	ARS-127	6271
23557 7590 09/03/2009 SALIWANCHIK LLOYD & SALIWANCHIK A PROFESSIONAL ASSOCIATION PO Box 142950 GAINESVILLE, FL 32614				
EXAMINER KELLY, ROBERT M				
ART UNIT 1633		PAPER NUMBER		
NOTIFICATION DATE 09/03/2009		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

euspto@slspatents.com

### Office Action Summary

**Application No.**

10/576,509

**Applicant(s)**

CHATELLARD ET AL.

**Examiner**

ROBERT M. KELLY

**Art Unit**

1633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 52-74 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 52-74 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(c), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(c) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/23/09 has been entered.

Claims 53, 55, 56, 63, 64, 67, 68, and 73 are presently amended.

Claims 75 is presently cancelled.

Claims 52-74 presently pending and considered.

***Claim Status, Cancelled Claims***

In light of the cancellation of Claim 75, all rejections and/or objections to such claims are rendered moot, and thus are withdrawn with regard to those claims.

***Claim Rejections - 35 USC § 112 - clarity***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

While previous rejections are withdrawn (i.e., Claims 55, 56, 63-65, 67, and 68), due to the amendments, the following new rejections are made:

Claims 54, 56-68, 73, and 74 are newly rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 54 recites "one or more polypeptides of interest". The metes and bounds of such limitation are not clear. To wit, what is of interest to one person, may not be of interest to another. It would appear then, that Applicant is claiming what is of interest to Applicant. The Artisan cannot be forced to reach into the mind of Applicant to find out which polypeptides are infringing and which are not. It is recommended to remove the limitation "of interest".

Claim 56 recites "one or more polypeptides of interest". The metes and bounds of such limitation are not clear. To wit, what is of interest to one person, may not be of interest to another. It would appear then, that Applicant is claiming what is of interest to Applicant. The Artisan cannot be forced to reach into the mind of Applicant to find out which polypeptides are infringing and which are not. It is recommended to remove the limitation "of interest".

Claim 56 recites the limitation "the DNA" in Claim 54. There is insufficient antecedent basis for this limitation in the claim. To wit, there exist three types of DNA, in elements (a), (b), and (c), of Claim 54. It would remedial to recite "the DNA sequence coding for one or more polypeptides of interest".

Claim 59 recites "polypeptide of interest". The metes and bounds of such limitation are not clear. To wit, what is of interest to one person, may not be of interest to another. It would appear then, that Applicant is claiming what is of interest to Applicant. The Artisan cannot be forced to reach into the mind of Applicant to find out which polypeptides are infringing and which are not. It is recommended to remove the limitation "of interest".

Claim 60 recites "polypeptide of interest". The metes and bounds of such limitation are not clear. To wit, what is of interest to one person, may not be of interest to another. It would appear then, that Applicant is claiming what is of interest to Applicant. The Artisan cannot be forced to reach into the mind of Applicant to find out which polypeptides are infringing and which are not. It is recommended to remove the limitation "of interest".

Claim 61 recites "polypeptide of interest". The metes and bounds of such limitation are not clear. To wit, what is of interest to one person, may not be of interest to another. It would appear then, that Applicant is claiming what is of interest to Applicant. The Artisan cannot be forced to reach into the mind of Applicant to find out which polypeptides are infringing and which are not. It is recommended to remove the limitation "of interest".

Claim 62 recites "polypeptide of interest". The metes and bounds of such limitation are not clear. To wit, what is of interest to one person, may not be of interest to another. It would appear then, that Applicant is claiming what is of interest to Applicant. The Artisan cannot be forced to reach into the mind of Applicant to find out which polypeptides are infringing and which are not. It is recommended to remove the limitation "of interest".

Claim 63 recites "polypeptide of interest". The metes and bounds of such limitation are not clear. To wit, what is of interest to one person, may not be of interest to another. It would appear then, that Applicant is claiming what is of interest to Applicant. The Artisan cannot be forced to reach into the mind of Applicant to find out which polypeptides are infringing and which are not. It is recommended to remove the limitation "of interest".

Claim 63 recites "the DNA sequence coding for a polypeptide of interest", in Claim 54. Such lacks proper antecedent basis. To wit, Claim 54 recites "a DNA sequence coding for one or more polypeptides of interest".

Claim 64 recites "polypeptide of interest". The metes and bounds of such limitation are not clear. To wit, what is of interest to one person, may not be of interest to another. It would appear then, that Applicant is claiming what is of interest to Applicant. The Artisan cannot be forced to reach into the mind of Applicant to find out which polypeptides are infringing and which are not. It is recommended to remove the limitation "of interest".

Claim 64 recites "a DNA sequence coding for a polypeptide of interest", in Claims 53-55. Such is unclear for its metes and bounds. To wit, while Claim 55 utilizes proper terminology to state "further comprising", making clear it is not meant to modify the limitations (a)..(c) of Claim 54, Claim 64 recites what appears to possibly modify (c) of Claim 54, but utilizes something lacking proper antecedent basis, as Claim 54 recites "one or more polypeptides of interest". However, Applicant also fails to utilize terminology to "further comprising". Hence, the Artisan would not know if it modifies (c) of Claim 54, and hence, whether (a) or (b) of Claim 54 are required and/or modified, or whether this claim is limited to two separate DNA sequences encoding for at least one polypeptide of interest.

Claim 70 recites "polypeptide of interest". The metes and bounds of such limitation are not clear. To wit, what is of interest to one person, may not be of interest to another. It would appear then, that Applicant is claiming what is of interest to Applicant. The Artisan cannot be forced to reach into the mind of Applicant to find out which polypeptides are infringing and which are not. It is recommended to remove the limitation "of interest".

Claim 73 recites "said promoter domain or a functional expression promoting fragment thereof", in Claim 73. Such lacks proper antecedent basis. Because the functional expression promoting fragment thereof is previously defined, Applicant should not refer to it as "a functional expression promoting fragment thereof".

Claim 73 is generally unclear for its metes and bounds. The appended amendment to the claim is so awkward it is difficult to say what is and what is not included. It is suggested to recite "wherein said vector comprises a protein-expression sequence comprising a promoter domain, or a functional expression-promoting fragment thereof, operably linked to a DNA sequence encoding for at least one polypeptide, such protein-expression sequence further being both 5' and 3' operably-flanked by at least one insulator consisting of SEQ ID NO: 1, which operably-flanking insulators are removed from their normal insulator context". While the limitations are difficult to put to proper words, and the suggested limitation is not considered herein on the merits, what is important is to make clear that (i) the insulators are not in any part of their normal context (i.e., the flanking nucleotide sequences to the insulator or not their normal flanking nucleotide sequences), (ii) there are at least one insulator on each end of the protein-expression sequence, (iii) the insulators are operably-linked to the protein-expression sequence, and (iv) the promoter/functional fragment thereof is operably linked to the coding sequence.

Claims 54, 56-63, 64-68, and 74 are rejected for depending from at least one rejected parent claim.

***Claim Rejections - 35 USC § 112 – new matter***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

In light of the arguments, the rejections of Claims 56 and 65-68 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement, for comprising new matter, are withdrawn. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

To wit, the PCT document, of the which the present Application is a 371 Application, demonstrates adequate support in its originally-filed claims. As such, being that such document is filed under 35 USC 371, rather than 35 USC 119, the document demonstrates sufficient description to provide for possession of the claimed invention.

***Claim Rejections - 35 USC § 112 - enablement***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

In light of the amendments, the rejections of Claims 73-74 under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for methods in which the vector contains a promoter operatively linked to a coding sequence of interest, does not reasonably



provide enablement for any embodiment lacking a promoter and operatively-linked coding sequence, are withdrawn.

To wit, the claims now require the vector to encode the polypeptide, and be so-operably linked to the promoter/fragment which acts to promote transcription.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 52-55, 57, 58, 62-64, and 69-73 remain and/or are newly rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,395,549 to Tuan, et al., Recillas-Targa, et al. (2002) Proceedings of the National Academy of Sciences, USA, 99(10) 6883-88), Chung, et al. (1997) Proceedings of the National Academy of Sciences, USA, 94: 575-80, and U.S. Patent No. 6,432,700 to Henderson, et al, for reasons of record, or as necessitated by amendment.

Tuan teaches integrating vectors comprising enhancers, insulators, and promoters to drive the expression of any gene of interest in animal cells (ABSTRACT). Further, it is taught to use barrier-function sequences to isolate the integrated vector from position effects in the chromatin to avoid silencing (e.g., Detailed Description of the Invention, paragraph 5). Hence, Tuan teaches that it is known in the Art to place barrier-function sequences on both sides of an integrating vector in order to protect it from silencing, and this can be used for the expression of desired transgenes. Further Tuan teaches the use of GFP coding sequences as a reporter for

expression (e.g., paragraph preceding "Constructs and Vectors), and further to link the expression of such GFP to hCMV to obtain expression in cells (e.g., Figure 8), as it is well known that such promoters are widely active in many cell types (absent reason to believe otherwise, this is hCMV-IE1, as such is the standard utilized in the Art for constitutive expression). Hence, the Artisan would know that the use of a GFP coding sequence would allow quick identification of transformed cells, as is standard in the Art to identify the transformed and expressing cells.

Recillas-Targa teaches that the position protection effect of the chicken beta-globin insulator is located in a larger region encompassed by Applicant's SEQ ID NO: 1 (e.g., Figure 1), and is severable from the enhancer blocking activity (e.g., TITLE). Further, Recillas-Targa teaches that it is normal to utilize two copies of the position-effect on both sides of the vector provide for good isolation from position effects (e.g., p. 6885, col. 2, paragraph 3). Lastly, Recillas-Targa teaches minimization of domain sizes (e.g., whole article).

Chung teaches that the same insulator as Recillas-Targa is active in mammalian cells (e.g., p. 576, col. 2, paragraph 2).

Henderson teaches that it is optimal to minimize the size of the other components of the vector, in order to make more room for transgenes which are to be expressed (e.g., col. 17, paragraph 1).

Further, Official Notice is provided that polyA sequences are known in the Art for transcriptional processing, and typically used in the Art.

Hence, from this, the Artisan would be motivated to make an integrating vector, comprising two copies of SEQ ID NO 1 on each end of the integrating vector, with the normally-

present base that Applicant has removed from the sequence, and further to comprise the CMV promoter driving expression of GFP. The Artisan would be so-motivated to provide the minimal sequence of the beta-globin barrier sequence of Recillas-Targa, and do so to express proteins in mammalian cells, as is taught in Chung. In addition, there is a reasonable expectation of success, as the use of such barriers was known, the methods of minimization were known, and the methods of utilizing such to express proteins from integrated vectors was known.

However, such, in itself, does not make obvious the further deletion of the base which Applicant's SEQ ID NO: 1 is missing, from that of the known sequence of the chicken beta globin insulator/barrier sequence.

On the other hand, it is clear that the Artisan knew that the important sequences for the barrier functions were those regions that did not bind proteins (e.g., Recillas-Targa, DISCUSSION), and that intervening sequences were not known to be important. Moreover, Applicant's deleted base is within the intervening sequences (e.g., Chung, FIGURE 3, line 5 of the sequence, the penultimate "C" in such line, determined by comparison to Applicant's specification, FIGURE 1).

Hence, it would be obvious to further delete the "C" between the binding regions. The Artisan would have done so to further minimize the size the barrier region. Further the Artisan would have expected success, as such region was not bound by any proteins which cause the barrier effect.

Therefore, the Artisan would make these integrating vectors and transform mammalian cells with such vectors to express transgenes, including GFP for identification of those cells

expressing the transgene. The Artisan would have expected success, as the methods were known in the Art.

***Response to Argument – 103 – Tuan/Recillas-Targa/Chung/Henderson***

Applicant's arguments of 6/23/09 have been fully considered but are not found persuasive.

Applicant argues that "it is necessary that 'prior art would have suggested making the specific molecular modifications necessary to achieve the claimed invention'", thereby arguing that Recillas-Targas teaches the minimal insulator, including the C which is deleted in Applicant's sequence. Thus it is argued at there existed no motivation to further reduce the size of the sequence for use within plasmids (pp. 11-12, paragraph bridging).

Such is not persuasive. Applicant argues that motivation must be specific for the molecular modifications necessary to achieve the claimed invention, which implies, from the recitation of case law that KSR lends credence to the finding In re Deuel valid for such terminology being applied strictly to the specific modification (Applicant's argument, paragraph bridging pages 11-12, compared to the quoted last two paragraphs on p. 11). However, it is also clear that KSR stated, with regard to the same TSM analysis "As long as the test is not applied as a 'rigid and mandatory' formula". In stating such, the Artisan understands that he or she may utilize the other disclosure for deducing further modifications which would yield similar function. Motivation simply need not be specific. This is at the core of KSR. Here, the motivation, as stated in the rejection is the motivation to minimize the amount of trans-sequences in a vector, and the knowledge that intervening, non-contacted-by-protein, sequences of the insulator are not so relevant as to disallow deletion of the specific C. Hence, the non-specific

motivation is provided: to minimize trans-sequence size, and the reasonable expectation of success is found: the intervening base could reasonably be deleted as it is not important for contacting the protein.

Applicant argues that Henderson limits their teaching of minimizing trans-sequence size to minimizing transcriptional regulatory elements, which provides no motivation to achieve the claimed invention (p. 12, paragraph 1).

Such is not persuasive. Henderson teaches that the purpose for minimizing sequences is to provide for more room for coding sequences, as stated above. Hence, to believe that the Artisan would not understand to minimize any trans-sequence appears to be saying that the Artisan does not understand anything but what is specifically stated. Motivation need not be specific, as is found in the core of KSR.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 52-59, 62-67, and 69-74 remain and/or are newly rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,395,549 to Tuan, et al., Recillas-Targa, et al. (2002) Proceedings of the National Academy of Sciences, USA, 99(10) 6883-88), Chung, et al. (1997) Proceedings of the National Academy of Sciences, USA, 94: 575-80, and U.S. Patent No. 6,432,700 to Henderson, et al. as applied to claims 52-55, 57, 58, 62-64, and 69-73 above, and

further in view of Perlman, et al. (2003) The Journal of Clinical Endocrinology & Metabolism, 88(7): 3227-35 and Aldrich, et al. (1998) Cytotechnology, 28: 9-17, for reasons of record.

As shown above, the Art teaches various claims, but does not teach the polypeptide of interest being FSH alpha and beta subunits, or the use of CHO cells, bicistronic vectors and the question of isolation of the protein has not been addressed.

On the other hand, Perlman teaches that CHO cells can be used to express FSH from vectors comprising the alpha and beta subunits (e.g., p. 3228, col. 1).

Aldrich teaches the use of bicistronic vectors for expression, which provide for reducing the time required to develop cell pools for protein expression (e.g., ABSTRACT).

Moreover, the Artisan would isolate the FSH for use (Official Notice).

Hence, it would be further obvious to transform CHO cells with such vectors carrying the alpha and beta subunits of FSH in a bicistronic vector. The Artisan would be motivated to do so in order to express and isolate FSH from the cells with reduced time to develop cell pools for protein expression. Moreover, the Artisan would have a reasonable expectation of success, as the cells were already known for expression of FSH and isolation techniques are known in the Art.

***Response to Argument – 103 – Tuan/Recillas-Targa/Chung/Henderson/Perlman/Aldrich***

Applicant's argument of 6/23/09 has been fully considered but is not found persuasive.

Applicant argues that the added art fails to overcome the problems of the base art (pp. 7-8).

Such is not persuasive. The cited art is not incorrect.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 52-55, 57, 58, 61-64, and 69-73 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,395,549 to Tuan, et al., Recillas-Targa, et al. (2002) Proceedings of the National Academy of Sciences, USA, 99(10) 6883-88), Chung, et al. (1997) Proceedings of the National Academy of Sciences, USA, 94: 575-80, and U.S. Patent No. 6,432,700 to Henderson, et al. as applied to claims 52-55, 57, 58, 62-64, and 69-73 above, and further in view of U.S. Patent No. 6,194,152 to Laus, et al.

As shown above, the Art teaches various claims, but does not teach the transgene for expressing thymidine kinase.

On the other hand, Laus teaches expression of thymidine kinase transgenes as a selectable marker in mammalian cells (e.g., section titled "c. Expression in Mammalian Systems", paragraph 7).

Hence, it would be further obvious to modify the vectors to comprise the thymidine kinase transgene as a marker for mammalian cell expression. Moreover, the Artisan would have a reasonable expectation of success, as such markers were well known in the Art.

***Response to Argument – 103 – Tuan/Recillas-Targa/Chung/Henderson/Laus***

Applicant's arguments of 6/23/09 have been fully considered but are not found persuasive.

Applicant argues that the additional art fails to overcome the problems with the base art rejection, above (pp. 12-13).

Such is not persuasive. There is nothing wrong with the base rejection.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 52-58, 62-66, and 68-74 remain rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,395,549 to Tuan, et al., Recillas-Targa, et al. (2002) Proceedings of the National Academy of Sciences, USA, 99(10) 6883-88), Chung, et al. (1997) Proceedings of the National Academy of Sciences, USA, 94: 575-80, and U.S. Patent No. 6,432,700 to Henderson, et al. as applied to claims 52-55, 57, 58, 62-64, and 69-73 above, and further in view of U.S. Patent No. 6,113,898 to Anderson, et al. and Aldrich, et al. (1998) Cytotechnology, 28: 9-17, for reasons of record.

As shown above, the Art teaches various claims, but does not teach the use of CHO cells, or the expression of the heavy and light chains of an immunoglobulin nor the use of bicistronic vectors, or humanized sequences.



On the other hand, Anderson teaches CHO cells being transformed to express the heavy and light chains of antibodies to the human B7.1 and/or B7.2 antigens (e.g., Summary of the Invention, penultimate paragraph).

Aldrich teaches the use of bicistronic vectors for expression, which provide for reducing the time required to develop cell pools for protein expression (e.g., ABSTRACT).

Moreover, the Artisan would isolate the Immunoglobulin for use (Official Notice).

Hence, at the time of invention, it would have been obvious to further modify the vector to comprise the coding sequences of the heavy and light chains of such antibodies in a bicistronic vector of aldrich. The Artisan would do so in order to express such in CHO cells, isolate the proteins, and reduce the time to develop cell pools for protein expression. Moreover, there is a reasonable expectation of success, as Anderson teaches such expression.

***Resposne to Argument – 103 – Tuan/Recillas-Targa/Chung/Henderson/Anderson/Aldrich***

Applicant's arguments of 6/23/09 have been fully considered but are not found persuasive.

Applicant argues that the base rejection is incorrect, and the further art does nothing to change the base rejection (pp. 12-13).

Such is not persuasive. There is nothing wrong with the base rejection.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 52-58, 60, 62-66, and 68-74 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,395,549 to Tuan, et al., Recillas-Targa, et al. (2002) Proceedings of the National Academy of Sciences, USA, 99(10) 6883-88), Chung, et al. (1997) Proceedings of the National Academy of Sciences, USA, 94: 575-80, and U.S. Patent No. 6,432,700 to Henderson, et al.; U.S. Patent No. 6,113,898 to Anderson, et al. and Aldrich, et al. (1998) Cytotechnology, 28: 9-17 as applied to claims 52-58, 62-66, and 68-74 above, and further in view of U.S. Patent No. 6,632,927 to Adair, et al.

As shown above, the various aspects are obvious, except the use of humanized sequences for a chain of the antibody.

On the other hand, Adair teaches humanized antibody sequences for expression in cells (e.g., ABSTRACT).

Hence, it would be obvious to substitute Adair's humanized sequences. The Artisan would do so to produce the humanized antibodies taught by Adair. Moreover, the Artisan would have a reasonable expectation of success, as Adair teaches such.

***Response to Argument – 103 – Tuan/Recillas-***

***Targa/Chung/Henderson/Anderson/Aldrich/Adair***

Applicant's arguments of 6/23/09 have been fully considered but are not found persuasive.

Applicant argues that the base rejections are incorrect, and the extra art fails to overcome the deficiencies (p. 13).

Such is not persuasive. There is nothing wrong with the base rejections.

***Conclusion***

No Claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **ROBERT M. KELLY** whose telephone number is (571)272-0729. The examiner can normally be reached on M-F, 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Woitach can be reached on (571) 272-0739. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert M Kelly/  
Primary Examiner, Art Unit 1633